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Developing capacity to protect human research subjects in a post-conflict, resource-constrained setting: procedures and prospects

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The capacity-building strategy used by a US-based research organisation, the Pacific Institute for Research and Evaluation (PIRE), to strengthen the system for the protection of human research subjects and the infrastructure of its international collaborating partner, the University of Liberia, are discussed. To conduct the much-needed biomedical and social science-based research-related activities in the future, this partnership is expected by PIRE to gradually evolve over time to strengthen the capacity of the local investigators and administrators of the University of Liberia. Accordingly, a unique opportunity to share technology and resources with a post-conflict, resource-constrained country is created by this partnership. This capacity-building model to strengthen the protection of human subjects in research can also be replicated in similar resource-constrained international settings and, accordingly, our experiences and limitations are shared in this paper.

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Health risks are global problems, and on the basis of published reports on HIV and other communicable diseases, we know that infectious diseases transcend geographical boundaries.[1–6] As such, US-based research scientists and investigators are increasingly collaborating with investigators in resource-constrained, high-disease-burdened countries to conduct biomedical and social science research studies designed to develop, implement and evaluate prevention and treatment strategies. Such studies usually include volunteers as research participants. Although federally supported research in the US has for many years followed established rigorous procedures to inform research subjects about potential risks and procedures to protect them from potential research-related harms, deviations from those established guidelines have sometimes led to disastrous results.[7–9] Notably, when research is conducted in resource-constrained countries by investigators who lack basic training in the safe and ethical conduct of human subject-related research, the potential for risk to research subjects is even greater. Accordingly, there is a dire need for US-based research organisations and academic institutions that collaborate with partners in resource-constrained countries to continually support infrastructure development and capacity-building efforts geared towards the goal of protecting the rights of human subjects in multilateral projects. Therefore, the purpose of this paper is to report on the procedures used to strengthen the infrastructure and system for the protection of human subjects at an international collaborating institution, the University of Liberia, in Monrovia, Liberia, which lacks a well-defined systematic procedure for the protection of human subjects in research.

METHOD

We designed a training programme to support this initiative, prioritising three primary objectives: (1) to provide technical assistance to promote the protection of human subjects; (2) to support capacity building in the protection of human subjects; and (3) to provide educational materials to enhance the protection of human subjects. The purpose of the technical assistance was facilitating local administrators in generating guidelines to support an institutional review board (IRB). The purpose of the training programme was to develop local capacity to conduct biomedical and social science research. We expected that the educational materials would be used as relevant resources such as references and templates to guide the development of a culturally appropriate programme for the protection of human subjects at the host institution.

Technical assistance to protect human subjects in research

The US-based organisation, Pacific Institute for Research and Evaluation (PIRE), provided technical assistance to our international collaborating partner, the University of Liberia, to establish a formal IRB system that is relatively compatible with international standards. The PIRE administrative staff and investigators for human research subjects also helped those at the University of Liberia to review the qualifications of potential IRB members and establish procedures for the administration of a formal and structured IRB. This was accomplished by one of the US investigators travelling to Liberia to help

Abbreviations: DHHS, Department of Health and Human Services; IRB, institutional review board; NBAC, National Bioethics Advisory Commission; OHRP, Office for Human Research Protections; PIRE, Pacific Institute for Research and Evaluation

the local administrators develop a plan for recruiting and selecting members on the guidelines and criteria established by the Office for Human Research Protections (OHRP) of the US Department of Health and Human Services (DHHS). Accordingly, candidates for IRB membership were selected on the basis of their research experience and expertise, including cultural diversity and sensitivity regarding community norms, and interest in safeguarding and promoting the rights and welfare of human subjects. Members included people who were knowledgeable in the areas of institutional commitments and regulations, laws applicable in research ethics, and standards of professional conduct and practice; also people who were knowledgeable and experienced in working with vulnerable populations, both scientific and non-scientific male and female professionals; and members who were not affiliated with the University of Liberia. Follow-up technical assistance continues to be provided by PIRE investigators to its Liberian partners via email and telephone.

Capacity-building initiatives to protect human subjects in research

The host organisation invited and sponsored a local investigator and key collaborating partner from the University of Liberia to come to the US to attend a week-long internationally focused conference on the protection of human subjects, hosted by the Public Responsibility in Medicine and Research and cosponsored by other governmental and non-governmental organisations. The investigator selected particularly relevant conference-related sessions, such as procedures to establish and administer an IRB in an international setting, safe and ethical conduct of clinical research, systems to track protocols for human research subjects and monitor adverse event reporting, and mock IRB sessions on both clinical and behavioural science research protocols. This created an excellent opportunity for the local Liberian investigator to experience first hand the kinds of issues that are commonly addressed by IRBs during the review process and to hear different points of views expressed by IRB committee members. Also, the local investigator observed how IRBs seek to resolve these issues so that the risks to human subjects can be minimised. After the local investigator returned to Liberia, a series of formal and informal sessions were organised to share the experiences and lessons learnt and the resource materials (eg, CD ROM/DVD, manuals on the protection of human subjects, IRB protocols, etc) obtained from the conference with Liberian counterparts at the University of Liberia.

In addition, the PIRE investigators provided local in-country hands-on training opportunities in the form of an intensive week-long hands-on workshop presentation, including an OHRP educational video series on protecting human subjects and a mock IRB-specific deliberation of a ''real-time'' research protocol. The workshop was attended by 20 representatives from the University of Liberia and Cuttington University, community-based organisations, and the Liberian Ministry of Health & Social Welfare (MOHSW), including local public health officials and research investigators. The topics covered during the workshop included

1. IRB in International Settings: Challenges & Future Directions
2. IRB in Liberia: What We Know and What We Don't Know
3. IRB 101: Goals, Policies and Procedures of an IRB
4. Research Ethics: Cultural Barriers versus International Standards
5. Procedures to Establish an IRB in Post-Conflict Liberia
6. The Mock IRB Deliberation.

We used excellent online resources such as The National Bioethics Advisory Commission (NBAC) report entitled *Ethical and policy issues in international research: clinical trials in developing countries* and the Nuffield Council on Bioethics report[10] entitled *The ethics of research related to healthcare in developing countries*. The video and DVD presentations obtained from OHRP included (1) *Protecting human subjects, Vols. 1–3* and (2) *Investigator 101*. As a component of this capacity-building initiative, the principal US-based investigator continues to provide both electronic and telephone-based training on protection of human subjects to Liberian investigators and IRB members.

Another capacity-building activity included the purchase of an internet-ready computer so that the investigators at the University of Liberia could access materials on the protection of human subjects developed by institutions such as the National Institutes of Health and nationally recognised IRB-related programmes. Additional capacity-building activity included the purchase of high-capacity computer scan disks with several volumes of relevant educational materials such as IRB guidelines, the Belmont Report and templates of IRB submission and informed consent forms. Also, IRB-relevant resource books and resources for additional training and in-service programmes were provided. Some of the initially available materials on the protection of human subjects focused on (a) the background and commitment to protection of human subjects, including the history of the movement on protecting human subjects in the US; (b) US guidelines and regulations that are relevant to social science, biomedical and behavioural research; (c) the operations of IRBs, its mandates and responsibilities; and (d) a typology of research methods and protocols for human research subjects generally used by US investigators, including links to databases on human subjects. These resource materials, especially the video series and internet capability, continue to serve as excellent ''visual learning and long-distance'' tools for the local Liberian investigators and the IRB members, respectively.

Finally, the OHRP requires that all personnel associated with human subject-related research receive education and training on the requirements for protecting human subjects. Accordingly, the local participants, including investigators and the reconstituted local IRB members, completed the online human subject training modules for certifications from the National Institutes of Health, DHHS and PIRE. This certification was important because principal investigators seeking funding through the DHHS grant and contract mechanisms are required to show documentations that key personnel on their research applications are human subjects certified by completing the requisite training in the protection of human subjects in research. These training modules require that local investigators, administrators and IRB members are familiar with ethical codes (eg, the Belmont Report, Declaration of Helsinki, etc); assurances (eg, the Federal Wide Assurance, etc); the history of the movement on protecting human subjects and the movement to establish IRBs, including examples of prior research activities associated with human subject abuse (eg, Tuskegee syphilis study, etc); guidelines regulating IRBs and ethics committees, including submission protocols for human research subjects (eg, International Compilation of Human Subject Research Protections, etc); regulatory standards (eg, International Conference on Harmonization—Guideline for Good Clinical Practice, CIOMS International Ethical Guidelines, etc) and the elements of informed consent, among others.

Technology transfer to protect human subjects in research

The US investigators also engaged in several technology transfer-related activities designed to establish culturally

sensitive protocols for the protection of human subjects in consideration of local customs and norms. Firstly, the PIRE–University of Liberia team included local Liberian investigators experienced in conducting in-country research on human subjects in the decision-making process. Secondly, the US investigators established a mechanism (eg, provision of 1 year of high-speed internet service) for Liberian investigators and IRB members to access the host institution's electronic archive of research protocols, training materials, consent forms and human subject protection-related templates that had already been approved for other projects by its IRB. Thirdly, the US and Liberian investigators discussed how those documents and protocols can be adapted to be culturally relevant for local-based research projects. For example, a respondent incentive fee that may seem to be reasonable by US standards can be equivalent to a month's pay at a foreign site and thus may be considered to be ''an undue incentive'' for the purpose of recruiting subjects into research studies. Fourthly, PIRE also committed itself to sharing its electronic archive of protocols approved by the IRB for commonly used research methods such as computer-assisted telephone surveys, focus groups with minors, informed consent protocols, age-appropriate consent languages and a variety of other often-used procedures with its foreign collaborator at the University of Liberia. This commitment served as an important capacity-building and technology transfer starting point for the local investigators, administrators and IRB members at the foreign institution by preventing them from having to ''reinvent the wheel'' for supporting their programme for the protection of human subjects. In addition, it has been cost effective, from a template-generating standpoint, to provide the local institution with samples of protocols that have already met US-based IRB standards for similar research methods, including the informed consent forms and procedures and data and safety-monitoring plans for the protection of human subjects. During the capacity-building workshop and other long-distance-related technical assistance efforts, the US investigators continually emphasised to the local investigators, administrators and IRB members at the foreign institution that the template protocols were only a starting point, and that all in-country protocols for human research subjects must be reviewed and approved by the counterpart local IRB in the context of the entire study and their local cultural norms.

Practical challenges and implications

Although this initial 1-week workshop focused primarily on the infrastructure and the practical aspects regarding investigator submission mechanics, IRB review policy and procedures, we did allot time for the discussion of salient, serious ethical issues and findings on the perspectives of developing world researchers.[11] For example, we summarised germane literature materials and included citations in the lecture presentations (advance copies of which were provided in the workshop materials) and we encouraged extensive discussions regarding the implications of those lectures on local ''real-life'' contexts, such as political influence to approve protocols, provision of incentives to research subjects in an environment with high poverty rate, high illiteracy rate and the relevance of informed consent, among others. In addition, we showcased the controversies surrounding HIV–AIDS research and clinical trials in sub-Saharan Africa,[12–18] generating a lively exchange on issues such as ''ethical imperialism''[19–20] in the context of unidirectional technology transfer (eg, from resource-rich to resource-poor institutions) and related implications, ''community consent''[21] and Liberian culture (ie, traditional approval system before community member participation, etc). Having introduced these issues, we strongly encouraged the participants to delve deeper in future meetings and, on the basis of local norms (eg, emerging situations, cultural contexts, etc), refine their policies regarding controversies learned or experienced from other resource-constrained settings. Throughout the week-long workshop, we endeavoured to raise rather than resolve ethical issues, and to educate them on human subject-related issues and challenges rather than impose US standards. Given the ethical subtleties and lack of institutional experiences and resources, however, we became convinced that future workshops were needed to deal more adequately with those complexities (instead of merely replicating the values, norms and practices of the resource-rich countries). We also understand that our commitment to moderate and complement active, online discussions and efforts to conduct a mock IRB meeting during the training may not be sufficient to fully empower the newly constituted IRB. Furthermore, we understand the limitations of the internet and laptop availability. Accordingly, to address the long-term concerns, we provided financial support for regular in-country human subject enrichment sessions (or discussion groups) and outlined plans to elicit grant support for member attendance at regional workshops (ie, sub-Saharan Africa), lobbied to institutionalise policies for the protection of human subjects within the host institution, and fostered the independence of the programme for the protection of human subjects.

CONCLUSION

Overall, PIRE believes that this collaborative partnership with local investigators and administrators at the University of Liberia will create numerous opportunities for conducting sponsored research that will make important scientific advancements in the prevention and treatment of health-related problems in Liberia. We feel that this method could be replicated in other post-conflict resource-constrained environments that lack significant resources for the protection of human subjects in research. We need only to turn on the news to understand how much support and technical assistance is desperately needed in post-conflict environments. In fact, the provision of technical assistance as an ethical issue is dealt with in the NBAC recommendations.[22] It should not be surprising that local investigators and administrators are dedicated to advancing medical science and committed to conducting rigorous science-based biomedical, behavioural and social science research that respects and protects the rights of research subjects. For example, the administration of University of Liberia not only offered enthusiastic support for this initiative, but is also fully committed to creating a long-lasting programme for the protection of human subjects in research that will make the institution eligible for international funding for health-related research projects that are greatly needed in Liberia.

This technical assistance, capacity building and technology-transfer initiative provided a unique and cost-effective opportunity to strengthen the local institution's programme for the protection of human subjects by making the host institution's tools, knowledge and expertise available to a post-conflict, developing country that lacks such resources to accomplish this objective without international funding and investigators' expertise. We contend that the initiative presented here could serve as a model for how institutions in resource-rich countries can efficiently share tools and technology with collaborating resource-constrained international partners, with the ultimate goal of supporting and monitoring the protection of human subjects in research.

For those who are interested in capacity building for the protection of human research subjects in resource-constrained settings, we recommend the following steps:

1. Identify the key institutions, resources and people by asset mapping and situation analysis in the targeted setting or country
2. Engage the local stakeholders by using inclusive, participatory methods
3. Secure the funding necessary to provide training, print and electronic resources, computer hardware and access to the internet
4. Conduct an in-country training workshop that includes both mock IRB demonstrations and online human subject certification
5. Constitute the committee by conducting elections before ending the workshop
6. Maintain active, ongoing communication and guidance links between the resource-rich institution and the new programme for the protection of human subjects
7. Facilitate the immediate submission of real applications and protocols to engage the new IRB while training is fresh and salient
8. Develop a sustainability plan (eg, funding sources) to support the independence of the IRB, lobby for institutionalised human subject policy, promote attendance at regional conferences to network and share experiences and foster refresher workshops
9. Importantly, as a priority for the agenda on the protection of human subjects, sponsors of health research in resource-constrained countries must also invest in developing and further sustaining research ethics capacity in those settings.

Finally, the goal was to set up an infrastructure and further empower the IRB to reach its own locally acceptable solutions, which we accomplished. We, however, expect numerous challenges. For example, serious ethical complexities and dilemmas will evolve. Also, we realise that not all scientists of the developing world, especially those demanding scientific and research independence, will be willing to embrace protocols, norms and procedures from the developed world to be imposed on ''their way of doing business''. We were relatively sensitive to these concerns during the week-long workshop. But, for the group to be equipped to better grapple with, negotiate or resolve complex human subject-related issues, our expectation is that this IRB will grow, evolve and mature over time. Accordingly, the activities we discussed in this paper were the initial step in a series of events that we had crafted to support the transformation of the local IRB at the host institution from a new to an experienced entity for the protection of human subjects.

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